<110> MILLHAUSER, GLENN
      THOMPSON, DARREN
      BOLIN, KIMBERLEY
      ANDERSON, JOE
      MCNULTY, JOSEPH

<120> METHODS AND COMPOUNDS FOR MODULATING MELANOCORTIN RECEPTOR LIGAND BINDING AND ACTIVITY

<130> 407t-980910US

<150> PCT/US99/25201
<151> 1999-10-27

<150> 60/203,271
<151> 2000-05-09

<150> 60/226,047
<151> 2000-08-16

<160> 54

<170> PatentIn version 3.0

<210> 1
<211> 132
<212> PRT
<213> Homo sapiens

<400> 1

Met Leu Thr Ala Ala Val Leu Ser Cys Ala Leu Leu Leu Ala Leu Pro
1   5   10   15

Ala Thr Arg Gly Ala Gln Met Gly Leu Ala Pro Met Glu Gly Ile Arg
            20   25   30

Arg Pro Asp Gln Ala Leu Leu Pro Glu Leu Pro Gly Leu Gly Leu Arg
        35   40   45

Ala Pro Leu Lys Lys Thr Thr Ala Glu Gln Ala Glu Glu Asp Leu Leu
    50   55   60

Gln Glu Ala Gln Ala Leu Ala Glu Val Leu Asp Leu Gln Asp Arg Glu
65   70   75   80

Pro Arg Ser Ser Arg Arg Cys Val Arg Leu His Glu Ser Cys Leu Gly
                85   90   95

Gln Gln Val Pro Cys Cys Asp Pro Cys Ala Thr Cys Tyr Cys Arg Phe
            100   105   110

Phe Asn Ala Phe Cys Tyr Cys Arg Lys Leu Gly Thr Ala Met Asn Pro
        115   120   125

-1-

Cys Ser Arg Thr
    130

<210>   2
<211>   46
<212>   PRT
<213>   Homo sapiens

<400>   2

Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys Cys
1   5   10   15

Asp Pro Cys Ala Thr Cys Tyr Cys Arg Phe Phe Asn Ala Phe Cys Tyr
            20   25   30

Cys Arg Lys Leu Gly Thr Ala Met Asn Pro Cys Ser Arg Thr
        35   40   45

<210>   3
<211>   33
<212>   PRT
<213>   Homo sapiens

<400>   3

Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys Cys
1   5   10   15

Asp Pro Ala Ala Thr Cys Tyr Cys Arg Phe Phe Asn Ala Phe Cys Tyr
            20   25   30

Cys

<210>   4
<211>   34
<212>   PRT
<213>   Artificial

<220>
<223>   synthetic mini-AGRP

<400>   4

Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys Cys
1   5   10   15

Asp Pro Ala Ala Thr Cys Tyr Cys Arg Phe Phe Asn Ala Phe Cys Tyr
            20   25   30

Cys Arg

<210>   5

<211> 34
<212> PRT
<213> Artificial

<220>
<223> synthetic AGRP fragment

<220>
<221> MOD_RES
<222> (1)..(1)
<223> C blocked with acetyl

<220>
<221> MOD_RES
<222> (34)..(34)
<223> R blocked with amino

<400> 5

Cys Val Arg Leu His Glu Ser Cys Leu Gly Gln Gln Val Pro Cys Cys
1   5   10   15

Asp Pro Ala Ala Thr Cys Tyr Cys Arg Phe Phe Asn Ala Phe Cys Tyr
            20   25   30

Cys Arg

<210> 6
<211> 6
<212> PRT
<213> artificial

<220>
<223> AGRP fragment

<400> 6

Val Arg Leu His Glu Ser
1   5

<210> 7
<211> 6
<212> PRT
<213> Artificial

<220>
<223> AGRP fragment

<400> 7

Leu Gly Gln Gln Val Pro
1   5

```
<210>  8
<211>  3
<212>  PRT
<213>  Artificial

<220>
<223>  AGRP fragment

<400>  8

Arg Phe Phe
1


<210>  9
<211>  34
<212>  PRT
<213>  Artificial

<220>
<223>  AGRP fragment

<220>
<221>  misc_feature
<223>  Xaa is any amino acid


<220>
<221>  misc_feature
<222>  (34)..(34)
<223>  R is optional


<400>  9

Cys Xaa Xaa Xaa Xaa Xaa Xaa Cys Xaa Xaa Xaa Xaa Xaa Xaa Cys Cys
1               5                  10                  15

Asp Pro Xaa Ala Thr Cys Tyr Cys Xaa Xaa Xaa Asn Ala Phe Cys Tyr
            20                  25                  30

Cys Arg


<210>  10
<211>  6
<212>  PRT
<213>  Artificial

<220>
<223>  AGRP fragment

<220>
<221>  misc_feature
<223>  Xaa is any amino acid
```

```
<400>  10

Xaa Xaa Xaa Xaa Xaa Xaa
1                   5


<210>  11
<211>  6
<212>  PRT
<213>  Artificial


<220>
<223>  AGRP fragment


<220>
<221>  misc_feature
<223>  Xaa is any amino acid



<400>  11

Val Xaa Xaa Xaa Xaa Xaa
1                   5


<210>  12
<211>  6
<212>  PRT
<213>  Artificial


<220>
<223>  AGRP fragment


<220>
<221>  misc_feature
<223>  Xaa is any amino acid



<400>  12

Xaa Arg Xaa Xaa Xaa Xaa
1                   5


<210>  13
<211>  6
<212>  PRT
<213>  Artificial


<220>
<223>  AGRP fragment


<220>
<221>  misc_feature
<223>  Xaa is any amino acid



<400>  13
```

Xaa Xaa Leu Xaa Xaa Xaa
1   5

<210>   14
<211>   6
<212>   PRT
<213>   Artificial

<220>
<223>   AGRP fragment

<220>
<221>   misc_feature
<223>   Xaa is any amino acid

<400>   14

Xaa Xaa Xaa His Xaa Xaa
1   5

<210>   15
<211>   6
<212>   PRT
<213>   Artificial

<220>
<223>   AGRP fragment

<220>
<221>   misc_feature
<223>   Xaa is any amino acid

<400>   15

Xaa Xaa Xaa Xaa Xaa Ser
1   5

<210>   16
<211>   6
<212>   PRT
<213>   Artificial

<220>
<223>   AGRP fragment

<220>
<221>   misc_feature
<223>   Xaa is any amino acid

<400>   16

Val Arg Xaa Xaa Xaa Xaa
1   5

```
<210>  17
<211>  6
<212>  PRT
<213>  Artificial

<220>
<223>  AGRP fragment

<220>
<221>  misc_feature
<223>  Xaa is any amino acid


<400>  17

Val Xaa Leu Xaa Xaa Xaa
1                   5

<210>  18
<211>  6
<212>  PRT
<213>  Artificial

<220>
<223>  AGRP fragment

<220>
<221>  misc_feature
<223>  Xaa is any amino acid


<400>  18

Val Xaa Xaa His Xaa Xaa
1                   5

<210>  19
<211>  6
<212>  PRT
<213>  Artificial

<220>
<223>  AGRP fragment

<220>
<221>  misc_feature
<223>  Xaa is any amino acid


<400>  19

Val Xaa Xaa Xaa Glu Xaa
1                   5

<210>  20
```

```
<211>   6
<212>   PRT
<213>   Artificial

<220>
<223>   AGRP fragment

<220>
<221>   misc_feature
<223>   Xaa is any amino acid


<400>   20

Val Xaa Xaa Xaa Xaa Ser
1                   5

<210>   21
<211>   6
<212>   PRT
<213>   Artificial

<220>
<223>   AGRP fragment

<220>
<221>   misc_feature
<223>   Xaa is any amino acid


<400>   21

Xaa Arg Leu Xaa Xaa Xaa
1                   5

<210>   22
<211>   6
<212>   PRT
<213>   Artificial

<220>
<223>   AGRP fragment

<220>
<221>   misc_feature
<223>   Xaa is any amino acid


<400>   22

Xaa Arg Xaa His Xaa Xaa
1                   5

<210>   23
<211>   6
<212>   PRT
```

<213> Artificial

<220>
<223> AGRP fragment

<220>
<221> misc_feature
<223> Xaa is any amino acid

<400> 23

Xaa Arg Xaa Xaa Glu Xaa
1   5

<210> 24
<211> 6
<212> PRT
<213> Artificial

<220>
<223> AGRP fragment

<220>
<221> misc_feature
<223> Xaa is any amino acid

<400> 24

Xaa Arg Xaa Xaa Xaa Ser
1   5

<210> 25
<211> 6
<212> PRT
<213> Artificial

<220>
<223> AGRP fragment

<220>
<221> misc_feature
<223> Xaa is any amino acid

<400> 25

Xaa Xaa Leu His Xaa Xaa
1   5

<210> 26
<211> 6
<212> PRT
<213> Artificial

<220>
<223> AGRP fragment

<220>
<221> misc_feature
<223> Xaa is any amino acid

<400> 26

Xaa Xaa Leu Xaa Xaa Xaa
1   5

<210> 27
<211> 6
<212> PRT
<213> Artificial

<220>
<223> AGRP fragment

<220>
<221> misc_feature
<223> Xaa is any amino acid

<400> 27

Xaa Xaa Leu Xaa Glu Xaa
1   5

<210> 28
<211> 6
<212> PRT
<213> Artificial

<220>
<223> AGRP fragment

<220>
<221> misc_feature
<223> Xaa is any amino acid

<400> 28

Xaa Xaa Leu Xaa Xaa Ser
1   5

<210> 29
<211> 6
<212> PRT
<213> Artificial

<220>
<223> AGRP fragment

```
<220>
<221>  misc_feature
<223>  Xaa is any amino acid


<400>  29

Xaa Xaa Xaa His Glu Xaa
1               5

<210>  30
<211>  6
<212>  PRT
<213>  Artificial

<220>
<223>  AGRP fragment

<220>
<221>  misc_feature
<223>  Xaa is any amino acid


<400>  30

Xaa Xaa Xaa His Xaa Ser
1               5

<210>  31
<211>  6
<212>  PRT
<213>  Artificial

<220>
<223>  AGRP fragment

<220>
<221>  misc_feature
<223>  Xaa is any amino acid


<400>  31

Xaa Xaa Xaa Xaa Glu Ser
1               5

<210>  32
<211>  6
<212>  PRT
<213>  Artificial

<220>
<223>  AGRP fragment

<220>
```

-11-

```
<221>  misc_feature
<223>  Xaa is any amino acid


<400>  32

Val Arg Leu Xaa Xaa Xaa
1               5


<210>  33
<211>  6
<212>  PRT
<213>  Artificial


<220>
<223>  AGRP fragment


<220>
<221>  misc_feature
<223>  Xaa is any amino acid


<400>  33

Val Xaa Leu His Xaa Xaa
1               5


<210>  34
<211>  6
<212>  PRT
<213>  Artificial


<220>
<223>  AGRP fragment


<220>
<221>  misc_feature
<223>  Xaa is any amino acid


<400>  34

Val Arg Leu His Glu Ser
1               5


<210>  35
<211>  6
<212>  PRT
<213>  Artificial


<220>
<223>  AGRP fragment


<220>
<221>  misc_feature
<223>  Xaa is any amino acid
```

```
<400>  35

Xaa Xaa Xaa Xaa Xaa Xaa
1                   5


<210>  36
<211>  6
<212>  PRT
<213>  Artificial


<220>
<223>  AGRP fragment


<220>
<221>  misc_feature
<223>  Xaa is any amino acid



<400>  36

Leu Gly Gln Gln Val Pro
1                   5


<210>  37
<211>  6
<212>  PRT
<213>  Artificial


<220>
<223>  AGRP fragment


<220>
<221>  misc_feature
<223>  Xaa is any amino acid



<400>  37

Leu Xaa Xaa Xaa Xaa Xaa
1                   5


<210>  38
<211>  6
<212>  PRT
<213>  Artificial


<220>
<223>  AGRP fragment


<220>
<221>  misc_feature
<223>  Xaa is any amino acid
```

<400> 38

Xaa Gly Xaa Xaa Xaa Xaa
1   5

<210> 39
<211> 6
<212> PRT
<213> Artificial

<220>
<223> AGRP fragment

<220>
<221> misc_feature
<223> Xaa is any amino acid

<400> 39

Xaa Xaa Gln Xaa Xaa Xaa
1   5

<210> 40
<211> 6
<212> PRT
<213> Artificial

<220>
<223> AGRP fragment

<220>
<221> misc_feature
<223> Xaa is any amino acid

<400> 40

Xaa Xaa Xaa Gln Xaa Xaa
1   5

<210> 41
<211> 6
<212> PRT
<213> Artificial

<220>
<223> AGRP fragment

<220>
<221> misc_feature
<223> Xaa is any amino acid

<400> 41

Xaa Xaa Xaa Xaa Val Xaa
1   5

<210>   42
<211>   6
<212>   PRT
<213>   Artificial

<220>
<223>   AGRP fragment

<220>
<221>   misc_feature
<223>   Xaa is any amino acid

<400>   42

Xaa Xaa Xaa Xaa Xaa Pro
1   5

<210>   43
<211>   6
<212>   PRT
<213>   Artificial

<220>
<223>   AGRP fragment

<220>
<221>   misc_feature
<223>   Xaa is any amino acid

<400>   43

Leu Gly Xaa Xaa Xaa Xaa
1   5

<210>   44
<211>   6
<212>   PRT
<213>   Artificial

<220>
<223>   AGRP fragment

<220>
<221>   misc_feature
<223>   Xaa is any amino acid

<400>   44

Leu Xaa Gln Xaa Xaa Xaa
1   5

```
<210>  45
<211>  6
<212>  PRT
<213>  Artificial

<220>
<223>  AGRP fragment

<220>
<221>  misc_feature
<223>  Xaa is any amino acid


<400>  45

Leu Xaa Xaa Gln Xaa Xaa
1                5

<210>  46
<211>  6
<212>  PRT
<213>  Artificial

<220>
<223>  AGRP fragment

<220>
<221>  misc_feature
<223>  Xaa is any amino acid


<400>  46

Leu Xaa Xaa Xaa Val Xaa
1                5

<210>  47
<211>  6
<212>  PRT
<213>  Artificial

<220>
<223>  AGRP fragment

<220>
<221>  misc_feature
<223>  Xaa is any amino acid


<400>  47

Leu Xaa Xaa Xaa Xaa Pro
1                5

<210>  48
```

```
<211>   6
<212>   PRT
<213>   Artificial


<220>
<223>   AGRP fragment


<220>
<221>   misc_feature
<223>   Xaa is any amino acid



<400>   48

Leu Gly Gln Xaa Xaa Xaa
1                   5


<210>   49
<211>   3
<212>   PRT
<213>   Artificial


<220>
<223>   AGRP fragment


<220>
<221>   misc_feature
<223>   Xaa is any amino acid



<400>   49

Arg Xaa Xaa
1


<210>   50
<211>   3
<212>   PRT
<213>   Artificial


<220>
<223>   AGRP fragment


<220>
<221>   misc_feature
<223>   Xaa is any amino acid



<400>   50

Xaa Phe Xaa
1


<210>   51
<211>   3
<212>   PRT
```

```
<213>  Artificial

<220>
<223>  AGRP fragment

<220>
<221>  misc_feature
<223>  Xaa is any amino acid


<400>  51

Arg Phe Xaa
1

<210>  52
<211>  3
<212>  PRT
<213>  Artificial

<220>
<223>  AGRP fragment

<220>
<221>  misc_feature
<223>  Xaa is any amino acid


<400>  52

Arg Xaa Phe
1

<210>  53
<211>  3
<212>  PRT
<213>  Artificial

<220>
<223>  AGRP fragment

<220>
<221>  misc_feature
<223>  Xaa is any amino acid


<400>  53

Xaa Phe Phe
1

<210>  54
<211>  6
<212>  PRT
<213>  Artificial
```

<220>
<223> AGRP fragment

<220>
<221> misc_feature
<223> Xaa is any amino acid

<400> 54

Arg Phe Phe Asn Ala Phe
1   5